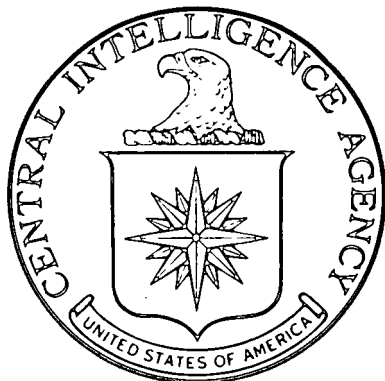


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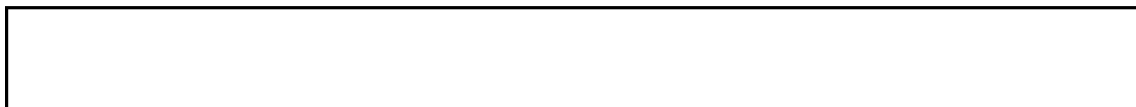
PHOTOGRAPHIC INTELLIGENCE REPORT

ANALYSIS OF T-SHAPED STRUCTURES

AT ABM FACILITIES

MOSCOW, USSR

Declass Review by NIMA/DOD



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ANALYSIS OF T-SHAPED STRUCTURES

AT ABM FACILITIES, MOSCOW, USSR

Introduction

T-shaped, earth-mounded structures have been noted at Moscow ABM Complexes EO5, E24, E33, and at the Naro-Fominsk Probable ABM Radar Facility (Doghouse). []

X1 [] The structure at the Doghouse was reported to have some similarities in configuration to those at the Moscow ABM Complexes but was considered to have a different function. Recent reports have re-designated these four structures as unidentified. The purpose of this report is to present an updated comparison and a construction chronology of the four structures at the Moscow ABM Facilities.

X1 All applicable [] photography [] was utilized in compiling this report. Detailed photographic references are not included but are available from the originating office on request. 25X1

Conclusions

The four T-shaped structures are similar to size and appearance and, taken as a group, are unique. Each of the structures is located at a facility containing major electronic components, and each is situated in close proximity to operations buildings and large radar antennas. All four structures are subject to definite limitations where vehicle access and service are concerned. A difference in length of the southernmost component part of the Doghouse is the only feature which differentiates it from those T-shaped structures at the ABM complexes. []

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Physical Description of the T-Shaped Structures

The four structures in question are similar enough in appearance so that the physical description of one will suffice for all four. The structures are T-shaped and earth-covered except for a raised, almost square central section which is uncovered. Whether the raised section is enclosed on the sides, or may be open, possibly for ventilation, cannot be determined. The actual "Tee" shape of the structures was formed by joining three individual components (buildings) to the raised section. These individual components were eventually earth-covered. Near each end of the "bar" of the "Tee" is a prominent stack or ventilator which rises several feet above the earth covering. The structures are not separately secured, although they are partially encircled by a shallow ditch or trench, probably for drainage purposes.

The raised central section is approximately 25 feet high, and is the highest part of the structure. The height of the earth-covered sections cannot be determined accurately, but is estimated to be 15-20 feet. Additional mensuration of each structure is presented in Figures 1-4. Dimensions of the structures prior to mounding were derived from [] photography and are illustrated by dashed lines. Mensuration of the structures after mounding had taken place was primarily derived from [] photography. The dimensions among the four vary only slightly with the exception of the structure at Naro-Fominsk where the increased length of the southernmost component section sets it apart from the other three.

At Complexes E24, E33, and the Doghouse, buried pipelines are associated with the T-shaped structures, linking them to operations buildings, and to nearby probable heat/power plants. Lack of adequate large scale photography precludes identification of similar lines at Complex E05, although a possible pipeline was noted on photography of [] extending from triad building 1A toward the T-shaped structure.

Limitations on Vehicle and Personnel Access

The four structures are served by various combinations of roads and walkways. In each case, the arrangement and type of roads constructed definitely restricts vehicle passage through the structures, and in some cases would present difficulty for a vehicle to even approach the structure.

At Complex E05, the structure can probably be driven through, although passage would be hampered by relatively short radius turns on the access road

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and by the fact that the road connecting to the "stem" of the "Tee" is apparently not hard-surfaced. At E24, there is no road connected with the stem of the structure, even though an opening may be present. A probable personnel entrance is located at the terminal ends of the other extensions, however, neither of these is considered suitable for vehicular traffic. Vehicles approaching the raised section of the structure along the access road must either back away from it or turn around within it. Neither alternative seems practicable for a large vehicle or a long load.

At Complex E33, as at E05, the chief limitation appears to be a sharp turn immediately outside the stem of the "Tee." Finally, traffic at the T-shaped structure located near the Doghouse would be limited by sharp turns in the access roads, and an unimproved road leading away from the stem of the structure. Since most of the functions suggested in previous reports depend upon routine vehicle access to and passage through the structure (i.e. warhead handling, missile handling/maintenance), the limitations indicated suggest some other function.

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Other ABM Facilities at Moscow

The other four ABM complexes at Moscow, relevant to this study, are Complexes E03, E15, E21, and E31.

Complex E15 was abandoned, in a semi-finished state of construction, Prior to abandonment, construction had progressed to a point

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where the T-shaped structure had been erected, although it was never covered over with earth. [] this T-shaped structure was dismantled and removed.

Complexes E03, E21, and E31, represent a second generation of deployment at Moscow. Complexes E03 and E21 are of fairly recent origin and have not reached a level of construction where the appearance of a T-shaped structure would normally occur. Complex E31, however, is approximately one year older than the other two. Based on construction timing at Complexes E05, E24, and E33, the appearance of a T-shaped structure at Complex E31 is long overdue.

Chronological Development, Moscow ABM Facilities

A table showing the chronological development of all ABM facilities at Moscow is presented in Figure 6. Emphasis is placed on the development of the T-shaped structures, where they occur.

By comparing the rates of construction progress shown for Complexes E05, E24, E31, and E33, it is apparent that a T-shaped structure should be in evidence at Complex E31. In order to parallel the construction plan of the other complexes, this structure should have been built at Complex E31 during the period []

REFERENCES

PHOTOGRAPHY

List available on request from IAS/DDI.

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1. NPIC. [] Possible AMM-Associated Activity Moscow Area, USSR, [], August 1965 (TOP SECRET [])
2. NPIC. [], T-Shaped Buildings at Probable ABM Facilities, Moskva Area, USSR, December 1966 (TOP SECRET [])

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FIGURE 1. LINE DRAWING OF T-SHAPED, MOUNDED STRUCTURE AT MOSCOW ABM COMPLEX E05.

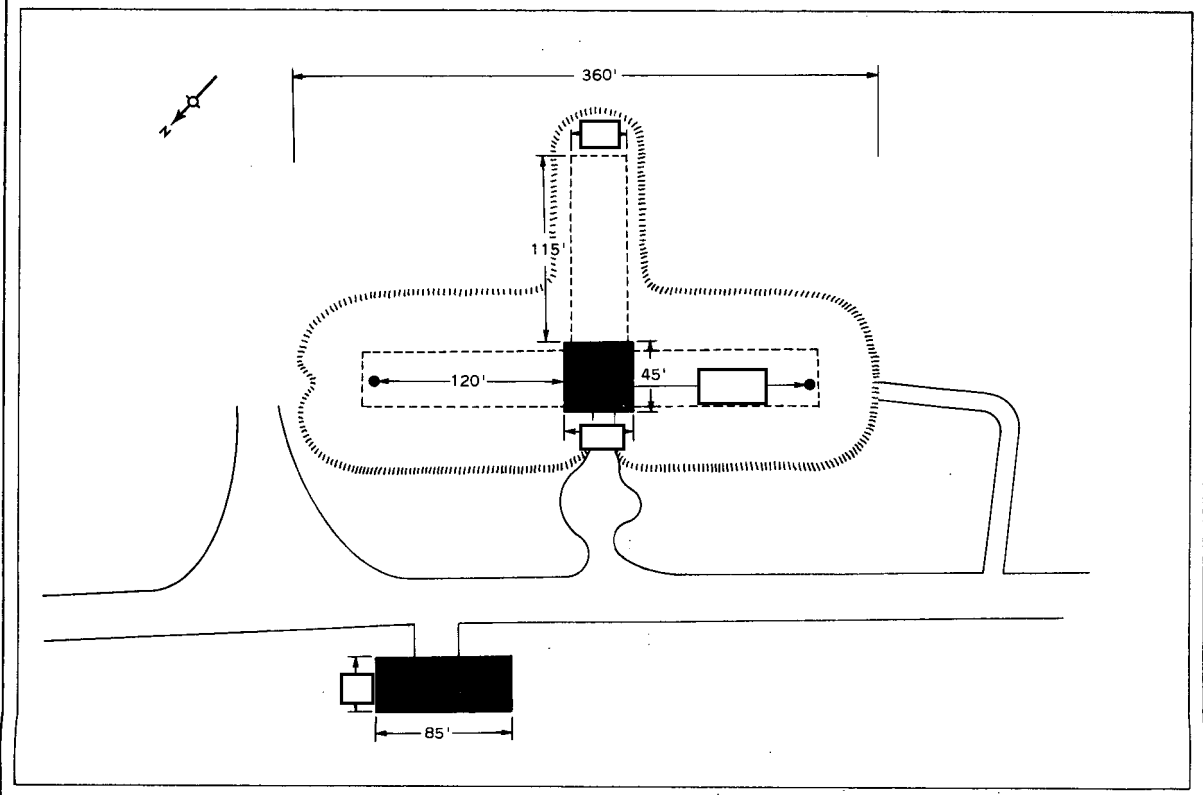
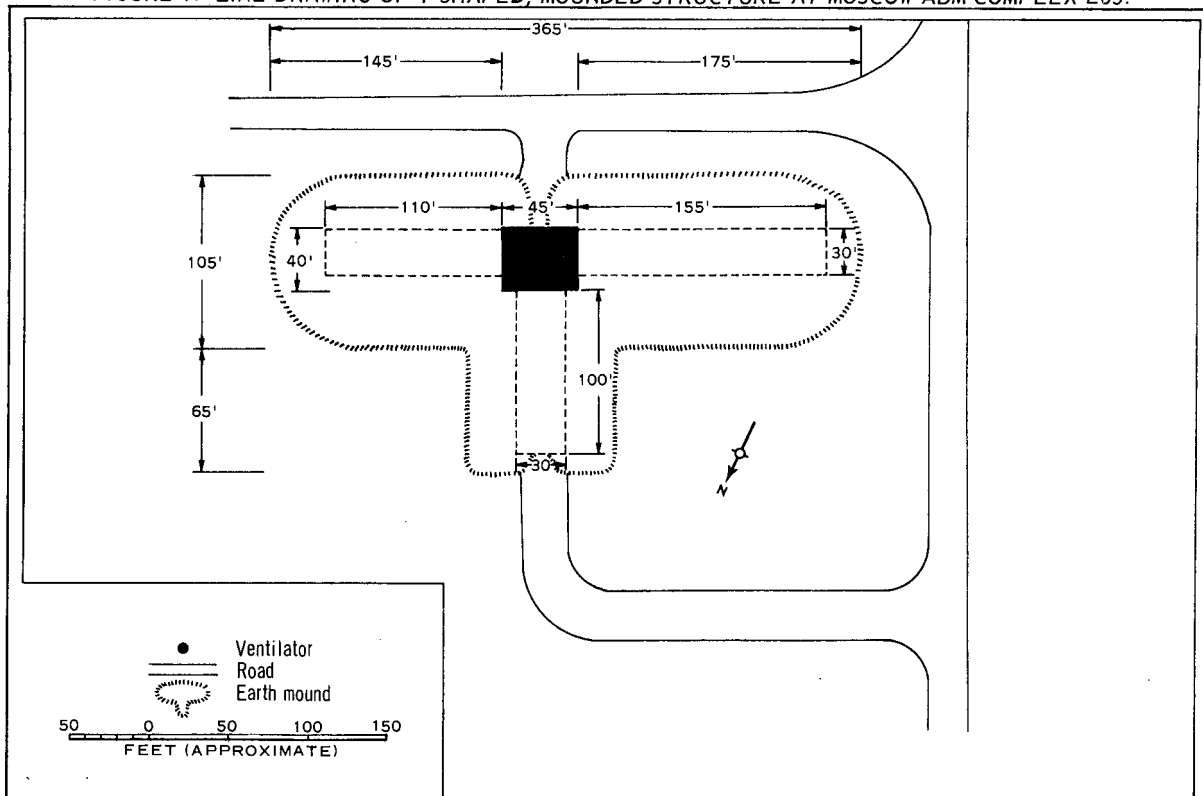


FIGURE 2. LINE DRAWING OF T-SHAPED, MOUNDED STRUCTURE AT MOSCOW ABM COMPLEX E24.

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FIGURE 3. LINE DRAWING OF T-SHAPED, MOUNDED STRUCTURE AT MOSCOW ABM COMPLEX E33.

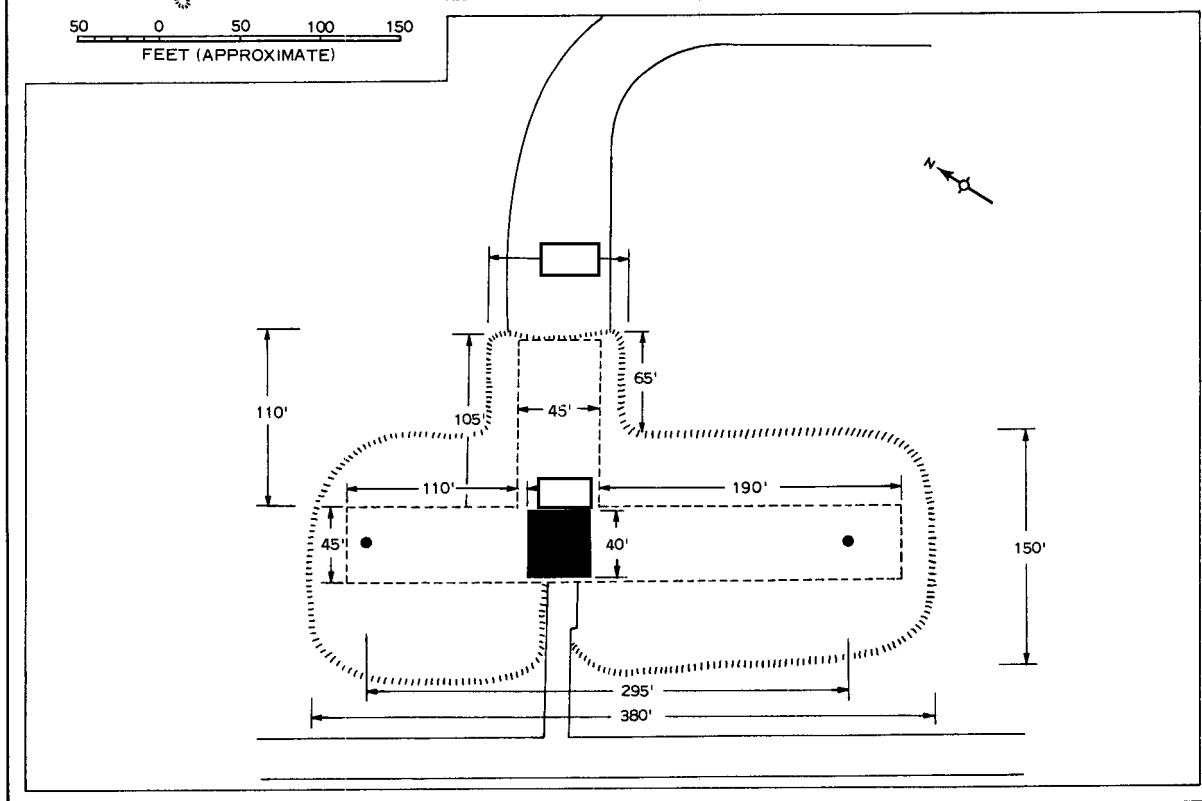
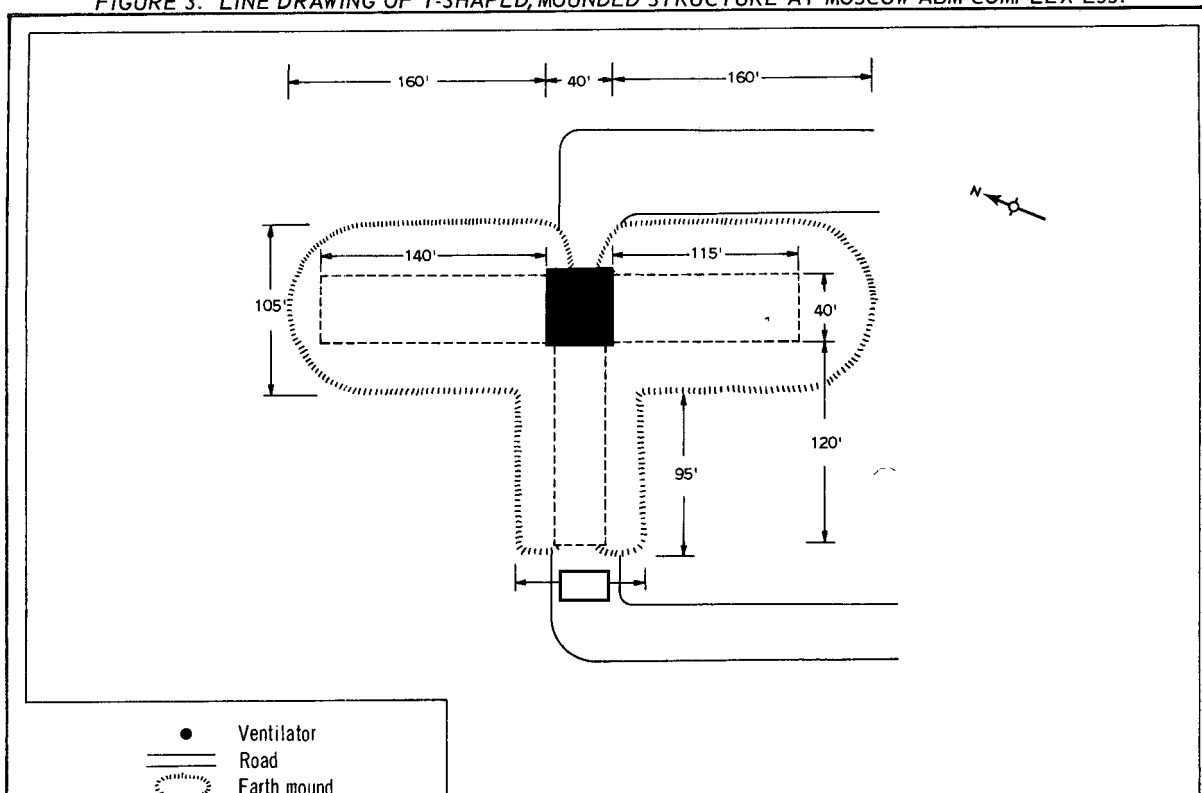


FIGURE 4. LINE DRAWING OF T-SHAPED, MOUNDED STRUCTURE AT NARO-FOMINSK PROBABLE ABM PHASED-ARRAY RADAR SITE (DOGHOUSE), OPERATIONS AREA A.

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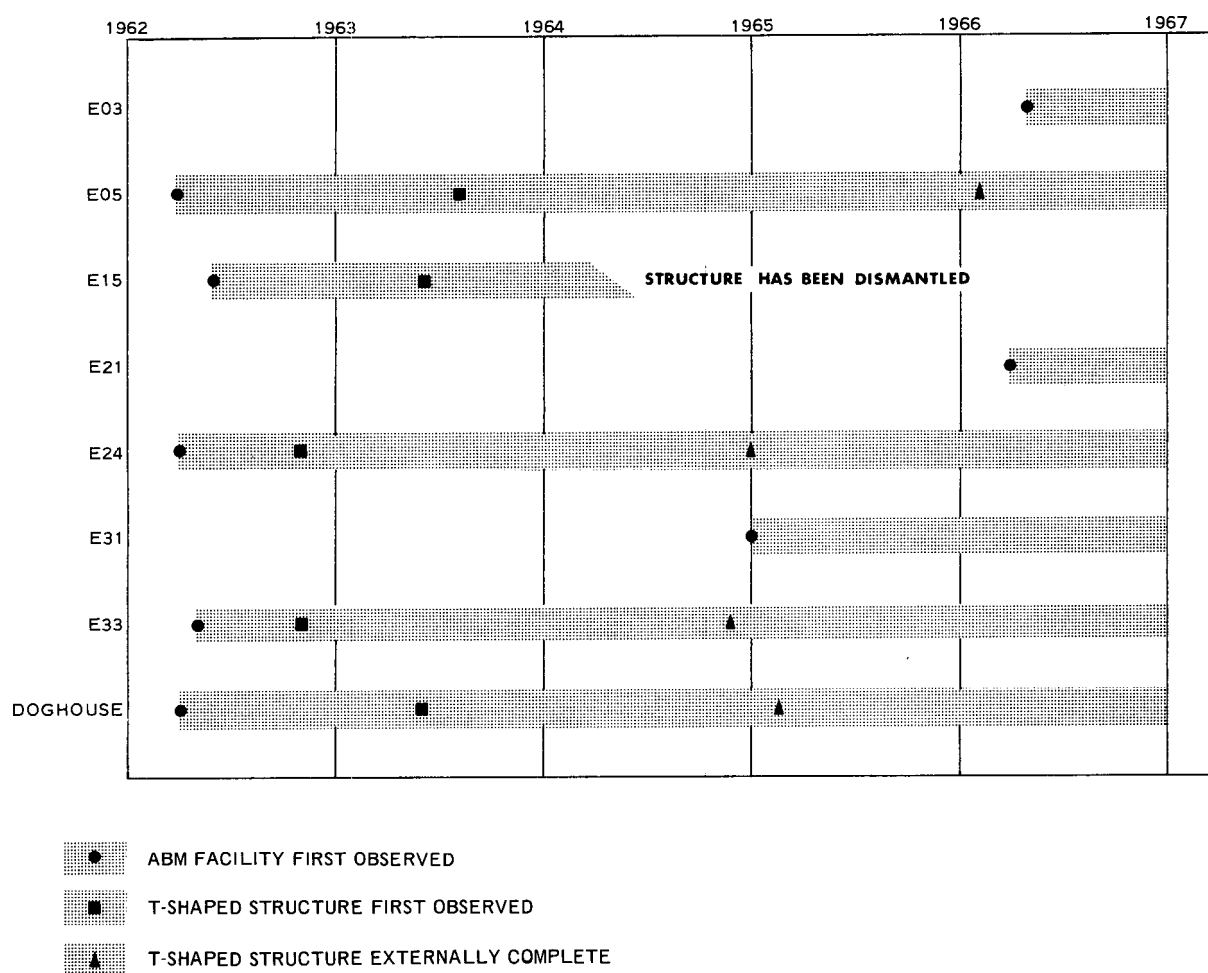


FIGURE 6. CONSTRUCTION CHRONOLOGY OF ABM FACILITIES, MOSCOW, USSR.

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